

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/096419 A1

(51) International Patent Classification⁷: **H01M 4/86**, 4/88

(21) International Application Number:

PCT/RU2005/000151

(22) International Filing Date: 30 March 2005 (30.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

2004109249 30 March 2004 (30.03.2004) RU

(71) Applicants (*for all designated States except US*):

ZAKRYTOE AKTSIONERNOE OBSHESTVO "IN-DEPENDENT POWER TECHNOLOGIES" [RU/RU];
Moskovsky pr-t, 78, lit.A, pom. 2N, St.Petersburg, 196084
(RU). **E-VISION BVBA** [BE/BE]; Vogelzang, 3, B-2460
Kasterlee (BE).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **KARICHEV, Ziya Ramizovich** [RU/RU]; Kuchin pereulok, 12-1, Moscow, 129626 (RU). **SPAEPEN, Jef** [BE/BE]; Vogelzang, 3, B-2460 Kasterlee (BE).

(74) Agent: **LAW FIRM "GORODISSKY & PARTNERS" LTD**; EGOROVA Galina Borisovna, B.Spasskaya str., 25, stroenie 3, Moscow, 129010 (RU).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ELECTRODE OF ALKALINE FUEL CELL AND METHOD FOR PRODUCING THEREOF

(57) **Abstract:** The invention relates to the field of electrical engineering and can be used in the production of electrodes for alkaline fuel cells. An object of the invention is to increase the electrode service life. According to the invention, an electrode of an alkaline fuel cell comprises an insulating frame having ports for feeding and discharging reagents, a mesh current collector embedded in the frame and having lead-outs extending beyond the frame, an active and a barrier layers sequentially applied onto the mesh current collector, wherein sites of the embedment of the current collector and the lead-outs in the insulating frame and a periphery of the current collector along an inner edge of the insulating frame are provided with a sealing layer which can be made of an electrolyte non-wettable substance, e.g. with a sealing layer made of fluoroplastic. The invention also provides a method for producing an electrode of an alkaline fuel cell, which method includes producing a mesh current collector having lead-outs, sequentially applying an active and a barrier layers onto the mesh current collector, embedding the current collector having the lead-outs into the insulating frame, wherein, before the application of the active and barrier layers onto the current collector, edges of the current collector and the lead-outs in sites of the embedment into the insulating frame are impregnated with a lacquer solution and, after the collector has been embedded into the insulating frame, a periphery of the collector along an inner edge of the insulating frame is impregnated with the lacquer solution. A solvent wetting the mesh current collector is used as a solvent for the lacquer, and a substance which forms a continuous, electrolyte non-wettable film after the solvent evaporation is used as the lacquer.



WO 2005/096419 A1